

Examples



Click here

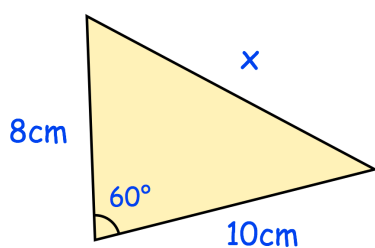


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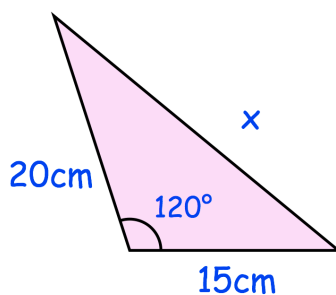
Workout

Question 1: Find  $x$  for each of the triangles below.

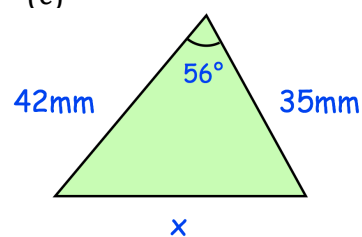
(a)



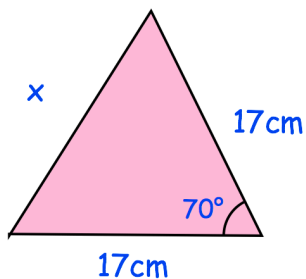
(b)



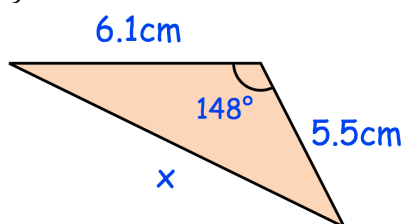
(c)



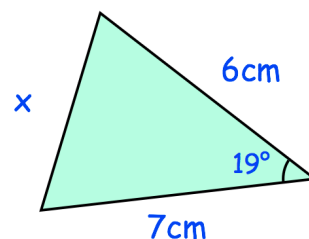
(d)



(e)

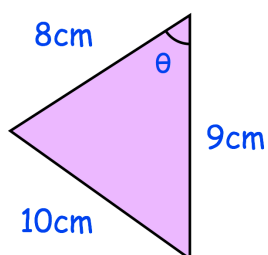


(f)

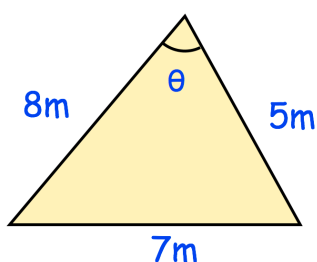


Question 2: Find the size of  $\theta$  for each of these triangles.

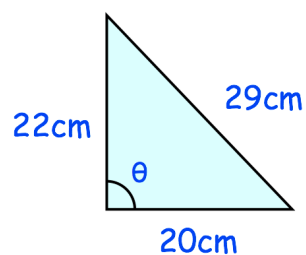
(a)



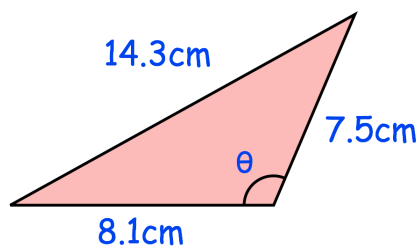
(b)



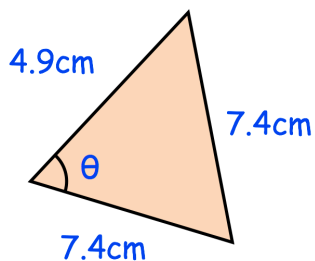
(c)



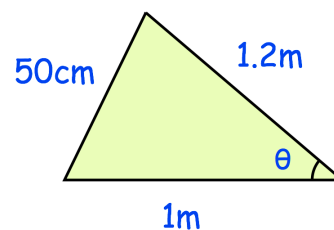
(d)



(e)



(f)



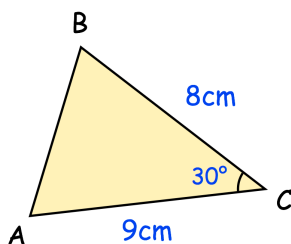
## Cosine Rule

Videos 335, 336 on [www.corbettmaths.com](http://www.corbettmaths.com)

- Question 3: In triangle ABC, the side AB = 6cm, the side BC = 8cm and angle ABC =  $100^\circ$ .  
Find the length of side AC.  
Give your answer to 1 decimal place.
- Question 4: In triangle DEF, the side DE = 30cm, the side DF = 40cm and the side EF = 45cm.  
Find the size of angle DFE.  
Give your answer to 3 significant figures.
- Question 5: In triangle GHI, the side GH = 3cm, the side HI = 18cm and the side GI = 20.5cm.  
Find the size of angle HGI.  
Give your answer to 3 significant figures.

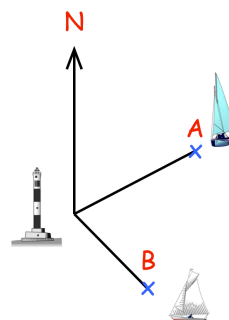
### Apply

- Question 1: Calculate the perimeter of triangle ABC

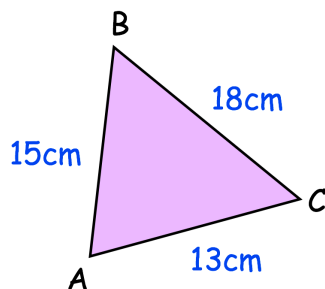


- Question 2: Boat A is 16km from a lighthouse on a bearing of  $055^\circ$ .  
Boat B is 11km from the same lighthouse on a bearing of  $152^\circ$ .

Calculate the distance between the two boats.



- Question 3: Find the size of the smallest angle in this triangle.



## Cosine Rule

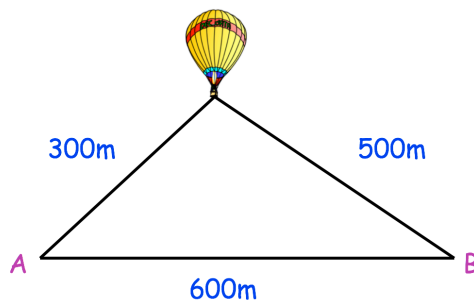
Videos 335, 336 on [www.corbettmaths.com](http://www.corbettmaths.com)

Question 4: A hot air balloon is flying above two point, standing on the ground at points A and B, 600m apart.

The hot air balloon is 300m from A and 500m from B.

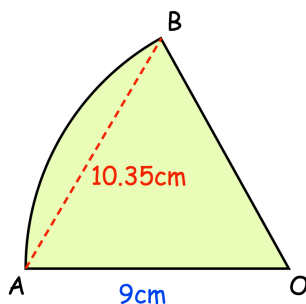
(a) Work out the angle of elevation from point B

(b) How high is the hot air balloon from the ground?



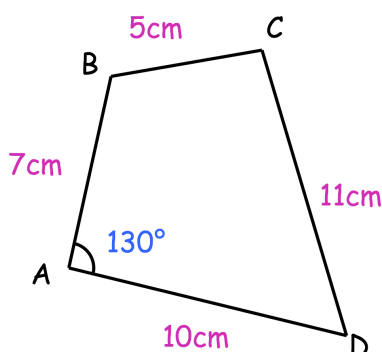
Question 5: Shown is sector OAB.  
O is the centre of the circle with radius 9cm  
A and B are points on the circle.  
The length of the chord AB is 10.35cm

Find the area of sector OAB



Question 6: ABCD is a quadrilateral.  
AB = 7cm BC = 5cm BC = 11cm AD = 10cm Angle BAD =  $130^\circ$

Work out the size of angle BCD.



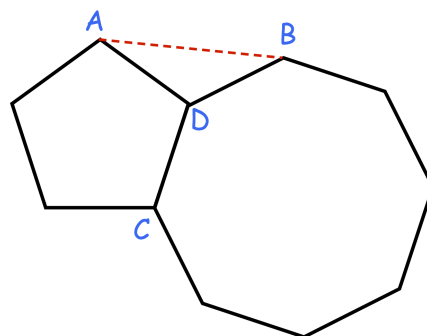
## Cosine Rule

Videos 335, 336 on [www.corbettmaths.com](http://www.corbettmaths.com)

- Question 7: A is a vertex of a regular pentagon.  
B is a vertex of a regular octagon.  
C and D are vertices of both polygons.

The perimeter of the octagon is 40cm.

Work out the length AB



- Question 8: A clock has two hands.  
A minute hand which is 5.5cm long and an hour hand which is 4cm long.

Find the distance between the tips of the two hands at 7:15am

- Question 9: Two ships, A and B, leave a port at 10:30

Ship A travels on a bearing of  $196^\circ$  at a speed of 30km/h.

Ship B travels on a bearing of  $244^\circ$  at a speed of 24km/h.

(a) Work out the distance between A and B at 14:00

(b) Work out the bearing of B from A at 14:00

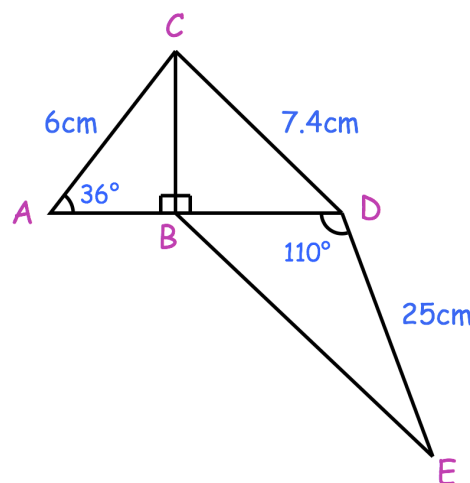
- Question 10: In the diagram:

ABC is a straight line.

AC = 6cm CD = 7.4cm DE = 25cm

Angle BAC =  $36^\circ$  Angle BDE =  $110^\circ$

Calculate the length of DE



- Question 11: The Cosine Rule is  $a^2 = b^2 + c^2 - 2bc\cos A$

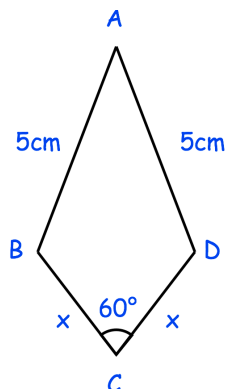
Make  $\cos A$  the subject.

## Cosine Rule

Videos 335, 336 on [www.corbettmaths.com](http://www.corbettmaths.com)

Question 12: Shown is kite ABCD

Prove  $\cos BAD = 1 - \frac{x^2}{50}$



Answers



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